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THE ROAD TO REMEMBRANCE

by Barbara Bullard, MA

Barbara Bullard has been a Professional Member of The Monroe Institute since 1989. She was selected for the 1986-87 edition of Who's Who of Scholars in American Community Colleges. In 1994 Barbara was nominated for Teacher of the Year at Orange Coast College where she has been a professor of speech for twenty-nine years and received the NISOD Teaching Excellence Award from the University of Texas. Professor Bullard is known for her innovative approach to teaching, communications, relationships, leadership, and healing. Her deep involvement with the Hemi-Sync® sound technology and three decades of research, testing, and teaching about the impact of speech, sound, and music on the brain were the impetus for a three-year effort to create a superlearning METAMUSIC®.

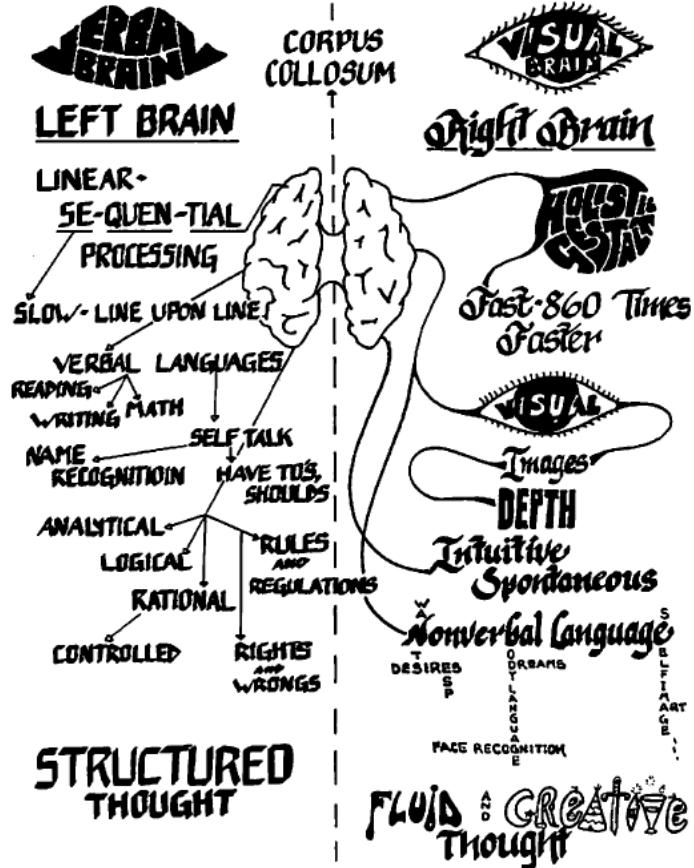
Speech-language pathologist Suzanne Evans Morris, Ph.D., specializes in multi-sensory techniques to enrich the learning environment and the therapeutic setting. Her presentation at the 1989 Professional Seminar on using METAMUSIC with autistic and learning-disabled children stimulated my own departure from "standard" superlearning modalities. Remembrance is dedicated to Suzanne's parents, David Le Count Evans and Mary Catherine Evans, who both died in the month before the 1993 professional meeting. Its title was given during a very profound laboratory PREP session.

The road to a new METAMUSIC product, *Remembrance*, began over eighteen years ago when I discovered the "suggestopedia" techniques of Dr. George Lozanov (*Superlearning*, Ostrander and Schroeder, 1979). As a professor of Interpersonal Communications, any methods to help my students learn faster or better interest me. That's why, for over a decade, I've recommended background music as a key element to catalyze "superlearning." Chapters 3 through 7 of *Communicating from the Inside Out*, coauthored with Kat Carroll, MA, discuss using whole-brain learning techniques—affirmations, visualization, music, and breathing—for anchoring information to the widest possible combination of neural networks and thus increasing retention.

Reading about the Hemi-Sync technology of The Monroe Institute in spring, 1988, I was intrigued from the outset. My students ordered a variety of the *Mind Food*® and *H-Plus*® learning tapes. The rapid results were amazing. Attendance at a *GATEWAY VOYAGE*® that summer led to a quantum leap in my personal growth and teaching style. Joining the Professional Division and attending the 1989 Professional Seminar familiarized me with the Hemi-Sync and the new *METAMUSIC* products. *METAMUSIC* and *H-Plus* became integral parts of my superlearning workshops. My students gave me feedback on Hemi-Sync's benefits

and limitations. These are thoroughly addressed in *Using the Whole Brain*, edited by Ronald Russell. So I'll focus on why a new *METAMUSIC* was desirable and its evolution.

Music easily anchors new information by widespread stimulation of neuronal pathways. It is the only outside stimulus which automatically synchronizes the two brain hemispheres. While the linear-sequential aspects, such as lyrics, beat, rhythm, and notation are being processed by the left hemisphere, the right hemisphere processes the holistic aspects, such as harmony, intonation, creativity, and the overall flow. However, music reaches far beyond the cerebral hemispheres. Brain imaging research has turned the spotlight on the "convergent zones" in the prefrontal lobes. Here the interconnectivity of the two hemispheres occurs and arouses the "executive" brain of coordinated thinking patterns. Simultaneously with side-to-side and front-to-back stimulation, a top-down process runs to the limbic brain, where our emotions are triggered. This emotional energy affects the immune system chemistry. The influence of music on brain and body is so pervasive that musicologist Dr. David Tame states: "To the question, 'Does music affect man's physical body?' modern research replies in the clear affirmative. There is scarcely a single function of the physical body that cannot be affected by musical tones" (*The Secret Power of Music*, 1984, p. 136). In his insightful book, *Stalking the Wild Pendulum*, Itzhak Bentov comments: "The universe is a vibrating, dancing organism. . . . In a word, both the universe as a whole and we in particular are not matter but music." Music's synergistic interaction with so many areas of the brain makes certain types of background music conducive to enhanced learning.



Dr. Oliver Sacks observes the pervasive influence of music in the article "Healing Vibrations" from *The Yoga Journal*, January/February 1994. "The ability of most Parkinson's patients to respond to music remains remarkably unimpaired. They may be unable to walk, but able to dance; unable to speak, but able to sing. Even just imagining music will do the trick. Rosalie apparently knows all of Chopin by heart. Sacks need only mention Opus 49 and her body, posture, and expression are transformed. The Parkinsonism seems to vanish, and even her EEG reverts to normal 'as the F-Minor Fantasie plays itself in her mind. . . .' Somehow, says Sacks, listening to music activates an 'internal natural music' that keeps all aspects of brain function working together" (p. 61).

Recent research from the University of California at Irvine adds further confirmation. Thirty-six college students listened to a Mozart sonata, a musical relaxation tape, and silence for fifteen-minute periods before taking three different IQ tests. The Mozart music variable produced an average IQ score of 119, compared to 111 for the relaxation tape and 110 for silence. Newsweek reporter Joshua Cooper Ramo questioned: "What is the magic of Mozart's flute? One theory is that the intricate musical structures resonate in the brain's dense web, lubricating the flow of neurons. Another is that the neural structure includes regular firing patterns that build along the surface of the brain like bridges. Mozart's musical structure

evokes a sympathetic resonance from the brain the way one vibrating piano string can set another humming" (Newsweek, October 1993).

Many of us learned our ABCs and other concepts in elementary school by singing them and still remember those tunes. If you're driving along in a car and the first three beats of an "oldies" song plays on the radio, you remember the lyrics almost immediately. You may even recall your boy or girlfriend of that time and how you felt about them. It is an axiom: what goes in with music comes out with music. Research is making it ever clearer that music is a vital key to maintaining physical health and enhancing mental functioning. But it must be the right kind of music to facilitate learning and retention. Our new *METAMUSIC* was designed with the intention of incorporating the newest findings from the fields of neuroscience and cognitive science.

Let's focus on that specific design and intent. *Remembrance Metamusic* has been especially crafted as a musical environment for quantum learning, peak performance, and the creative flow experience. A beta frequency is embedded to keep one alert and stimulated. Therefore, as a rule, the tape is not suitable for relaxation or meditation. To aid retention, the appropriate beta brain-wave frequencies were carefully chosen. The frequency on Side A, *Concentration*, is the same as that of *Mind Food Concentration*. The musical format replaces the "white noise" which may trigger an electromagnetic "buzz" that irritates and distracts most young listeners.

Side B, *Attention*, uses a faster beta frequency to assist a more rapid exchange of information between the hemispheres. Over the past several years, Professional Member Robert Sornson, EdS, and The Monroe Institute have investigated this frequency with individuals diagnosed with Attention Deficit Disorder (ADD). Recent findings point toward lack of a coordinated hemispheric brain-wave pattern in ADD. Bob is executive director of special education for Northville Public Schools and writes: "Generally, individuals with a diagnosed attention deficit demonstrate lower levels of glucose metabolism in the brain. It can be shown that these individuals generally use less oxygen across the cerebral cortex of the brain and produce brain-wave patterns that are somewhat slower than those of their peers in the general population. These facts add up to indicate that people with an attention deficit have difficulty maintaining high levels of brain arousal associated with sustained alertness and focused attention. Using an audio technology called Hemi-Sync, we have been exploring ways to enhance attention using sound patterns that are specifically designed to increase the level of alertness." Our joint preliminary investigations indicate that, although certain younger people prefer one side or the other of *Remembrance*, most adults cannot detect a difference. They can play it on auto-reverse as background as long as they need an alert focus.

The increased beta brain-wave entrainment underlying *Remembrance Metamusic* may also help with learning disabilities such as dyslexia and slow reading development. Both have, as an underlying cause, a disparity in timing between the two hemispheres. *The Brain-Mind*

Bulletin of April 1990 noted: "While reading, most good readers have left-hemisphere readings in the beta range (around 13 hertz) and mid-range amplitude. Dyslexics, on the other hand, tend to have left hemisphere measurements in the alpha (roughly 10 hertz) and higher-than-average amplitudes, although some have unusually low amplitude. . . . The cerebellum of dyslexics has not yet 'learned' the coordination and timing involved in internal balance of the body." The *Brain-Mind Bulletin* for March 1991 highlighted research indicating that "the ability to switch rapidly between hemispheres may be hallmarks of higher intelligence. . . . Gifted children . . . have a profound 'switching' ability between hemispheres." *Remembrance* promotes this desirable rapid processing partnership for those with challenges and for the gifted among us.

The current generation of schoolchildren tends to be more impulsive, mentally restless, distractible and spontaneous. Rapid switches in stimuli from electronic media lead them to expect constant stimulation. The brain's software has been rewired by mass media bombardment. The average American child watches approximately 6,000 hours of television by age five and continues to spend more time watching TV than in school (Jane A. Healy in VIRGO, "Endangered Minds," 1990). *Remembrance* is suited to help this generation of students learn to focus, concentrate, anchor, and retain the essential information for reading, writing, and mathematics.

When addressing a learning problem, begin by studying with *Remembrance* on stereo headphones. If this is too distracting for some individuals, play it in the background. It will have a stereo effect in either case. *Remembrance*'s tempo and rhythm match the faster heart rates of young listeners. Slower-paced music tends to slow the heart rate and bores them. Fortunately, the faster pace seems to coincide with an optimal heart rate for adults in the superlearning state. Five to ten times greater retention and recall is possible in line with superlearning parameters (Ostrander and Schroeder, *Superlearning*, 1979). Bell chime rhythms, crickets, and several other refrains are interspersed to assist in wider anchoring of information. The enchanting musical theme was composed with much love and talent by J. S. Epperson, a University of Southern California music major, with my guidance. A second superlearning *METAMUSIC* centered around the Mozart selection cited in the UCI study is in progress.

The technology underlying *Remembrance* is founded on the genius of Robert Monroe and his thirty-year refinement of Hemi-Sync. Both TMI audio engineer Mark Certo and Robert Sornson made crucial contributions to its design. We hope you'll enjoy this cooperative effort and keep us informed of the results as you use *Remembrance*.

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